SCIENCE.

FRIDAY, JANUARY 15, 1886.

COMMENT AND CRITICISM.

LIKE ALL CITIES which have not seriously grappled with the subject of municipal taxation, Baltimore has been suffering for years from the inequality of assessment, escape of personalty from taxation, the difficulty in enforcing payment, and the practice of many persons who do business in the city, of residing part of the year in the country, and thus withdrawing personal property from taxation. To remedy matters, a commission was appointed last summer to investigate the question; and during the past week a report has been made, of more than local interest. No opportunity was given for radical changes, as the state constitution, which requires that all personal and real property shall be taxed on a uniform basis, stands in the way. The committee favor the creation of sixteen city assessors, to be appointed without regard to politics, and with a tenure of sufficient length to secure expert service. The assessors are to constantly review both real and personal property, and prevent evasions. Property is to be assessed up to its full value, and the system of discounts for prompt payment of taxes is to be abolished. On the other hand, as an aid to the poorer classes, taxes may be paid quarterly. Professor Ely of Johns Hopkins university, who is one of the commission, adds a supplemental report, looking to a change in the constitution. He would abandon the attempt to tax all personal property, and attempt only to reach such classes of personal property as bank shares, for instance, which can be assessed without discrimination. The larger proportion of personal property should be taxed only by indirect means. Real estate should be taxed at one uniform rate; all incomes in excess of six hundred dollars per annum; so, also, all rents of dwellings, taking as a basis three times the annual rent of dwellings, in lieu of miscellaneous personal taxes; and the rental value of all stores, offices, manufacturing establishments, and other places of business, the rent being fixed at ten per cent. He recommends a special heavy taxation on retail and wholesale liquor-dealers, and finally favors the plan of depriving all state taxation from corporations and licenses, thus leaving real estate for local purposes.

TYPHOID-FEVER is a disease which has too long been permitted to exist without a well-directed effort to diminish its ravages. Although the specific micro-organism to which it is due is not so definitely ascertained as in the case of tuberculosis, still there are but few who question the relation of cause and effect between some microbe and the disease. It is also conceded that this germ is given off in the excreta of the patient, and that the spread of the disease is caused by the inhalation of air containing the germ, or by the imbibition of water, milk, or other fluid which has become contaminated with the infected dejections. In rural districts, where the water is derived from wells which are often but a few feet from the out-house, there is no difficulty in understanding how the infection might pass from the vault to the well, and how those who partake of the water might contract the disease. In large towns and cities, however, where the water-supply is from a distance, and the ground from which it is obtained free from such contaminating influences, the propagation of the disease must be accounted for in some other way. Particularly is this so, when, as frequently happens, the disease prevails in restricted sections, and is absent elsewhere, while the water consumed is the same for all sections. Manifestly the starting-point for an investigation is the infected excreta, if the accepted theory is the true one. If these could be followed and their route ascertained, more especially if the course pursued by the infectious element could be traced, the mystery would disappear, and the problem be solved.

Recent observations made in Brooklyn, a report of which has appeared in the daily press, point to the sewers and the drain-pipes of the houses as the channels by which the disease finds its way from one house to another, and clearly indicates that the plan to be pursued, based on our knowledge of the history of the disease, is to throttle it at the start by thoroughly disinfecting the discharges of typhoid-fever patients before they are thrown into the drains or into the out-houses.

Special attention has been directed in Brooklyn, during the past fall, to having this measure efficiently carried out, supplemented by repeated washings of the public sewers, in the districts specially affected, with a solution of chloride of lime. Shortly after these measures were inaugurated, the disease declined; but whether this was in any degree attributable thereto or not, cannot be decided until further observations are made. Thus far, a preliminary report only has appeared, but a fuller one is promised. It is well worthy the attention of all health authorities to follow out this or a similar plan of action; so that, if possible, a disease which caused in England alone thirty-six thousand deaths in six years, may be brought under control, and its spread confined within narrow limits. The report also recognizes the connection between defective plumbing and the spread of the disease (for, unless there were defects within the house, no infection could enter, even though the public sewers might be infected), and recommends the disconnection, by means of running traps, of all houses from the street-sewers, and the provision for full and free ventilation of both sewers and drains. Special stress is, however, laid upon the disinfection of the discharges within the house; for, if this is thoroughly done, neither the house-pipes nor the public sewers can become infected.

ONE OF THE MOST CURIOUS and important facts regarding the use of oil at sea in stormy weather to calm the waves is its apparent novelty to seamen. When in the last extremity, some of them 'happen to think of oil,' and, on trying it, find that the sweeping waves no longer break over their decks, and that the vessel rides with comparative ease where it labored heavily before. This is much as if a captain 'happened to think of the rudder' when he wished to shape a new course. The hydrographic office is accomplishing an excellent work in popularizing the practical value of this simple means of escaping danger.

A NEW JOURNAL is to be issued in France under the title *Archives de l'anthropologie criminelle et des sciences penales.* The study of criminals, from an anthropological and a psychological point of view, is due to the Italian school of which M. Beccaria was the founder, and which is now ably represented by MM. Sombroso and Ferri. The French interest in this subject is borrowed from Italy, and undoubtedly the French journal will aid in disseminating this interesting as well as scientific method of studying these defective classes.

THE U. S. S. RUSH sailed, Jan. 2, for the Aleutian Islands, in the hope of rescuing the crew of the missing whaler Amethyst, which it is thought might be there and in need of assistance. The winter climate of the Aleutians, though stormy, is rarely very cold, and the harbors are open all the year round. Most of the islands are uninhabited, and, from the absence of large animals, afford little food for a wrecked party, if cast ashore there. The visit of the Rush may save life, and prevent much suffering. The winter ice-line generally includes the Seal Islands, and it is likely that the Rush will not be pushed beyond the Aleutians, unless the weather be unusually favorable.

THE CITY OF MEXICO, for a number of months past, has been afflicted with a scourge of mosquitoes. These insects have prevailed to such an extent that they have been a constant theme of discussion, and have, in a number of instances, caused sickness, and, it is said, even death, by their poisonous bites. Official bulletins have been issued by the director of statistics, Dr. Peñafiel, seeking information as to their habits, natural history, etc. Singularly, the species, which is a large one, has not been known, or at least has not attracted attention before the past year; and fears are entertained that the pest is of recent introduction. The varying abundance of different kinds of insects during different years renders such a view improbable; yet it is significant that the present species is new to science, never having been described by entomologists.

IN CONNECTION WITH the article on the Russian railroads in central Asia, given on another page, it is interesting to note the following Berlin despatch to the London *Times*: "A government circular has been sent to all the newspapers, forbidding them to publish reports about the construction of military railways, the movement of troops, and other kindred matters, statements on such subjects being the exclusive privilege of the official organ of the war minister."

THAT THE PRACTICE of cremation is extending is to be inferred from the numerous references

which are made to new crematories by the daily press of this country and Europe. In France a very important advance has been made, as the prefecture of the Seine has decided to spend $40,000 for a crematorium in the great Parisian cemetery, Pêre Lachaise. Dr. G. Pini has recently published a book on 'La cremation en Italie à l'étranger de 1774 jusqu'à nos jours,' which shows that in Italy but little progress had been made until the cremation of the body of Albert Keller on the 22d of January, 1876, about which time a society of three hundred was organized at Milan, which published a circular giving urgent reasons for the practice. Thirty-one societies existed at the date of publication of Dr. Pini's work, in the principal cities of Italy, and 394 bodies had been submitted to disposal by fire in the crematories erected by those societies, mainly in Milan, Lodi, Brescia, and Rome. More than three-fourths of this number were cremated at Milan. The chief point worthy of comment in the present law relative to the Society of Milan, is its method of dealing with the only valid objection which has ever been urged against cremation; namely, the possible concealment of crime. The clause in question reads as follows: "If the cause of death is 'incertaine, suspecte, imprévue, ou violente,' the cremation of the body must be preceded by an autopsy." In this country a pamphlet has recently been published by the Worcester, Mass., cremation society, written by Dr. Marble. His argument might fitly be named, as he states, 'The dangers of earth-burial.' He cites many instances to prove that the graveyard is an objectionable institution for sanitary reasons. Chief among the resulting evils he places the pollution of water-supplies. A Massachusetts act was passed in 1885, authorizing the formation of societies for cremating the dead, and contains a provision for the prevention of the concealment of crime similar to that in force in Milan.

RAILROAD TO MERV, BOKHARA, AND SAMARKAND.

WHILE the attention of the world has been engaged upon the Servian-Bulgarian disputes, the Russian engineers have been pushing on the Trans-Caspian railroad, and transforming this mysterious Asia into a Russian province. This road, one of the wonders of our age, which commences at the Caspian Sea, is already opened three hundred and eighty kilometres, to within eighty kilometres of Askabad, and was to be opened to that place in December, 1885.

The grading of the road is finished to Dushak, one hundred and fifty kilometres south-east of Askabad. At this point the road will branch. The Indian branch will be built to Saraks, about two hundred kilometres, where it will connect with the English road from Quetta, through Afghanistan, making the great road to India. The other branch will run north-east into central Asia, crossing the Amu Daria, and running through Bokhara to Samarkand.

This line has been commenced, but it will take at least three years to complete it. It passes through Merv, and will be finished to that place next spring. From the Caspian Sea to Merv is about six hundred kilometres, and thence to the river Amu Daria is about five hundred kilometres.

The road to Dushak crosses a small portion of the Great Desert from the Caspian Sea, about one hundred kilometres, to the great range of mountains that separate Persia from Turkestan, thence along the foot of this range of mountains, through a tolerably well-watered region, to Dushak. Here it crosses the steppes of the Great Desert, towards those broad plains whence Attila, Genghis Khan, and Tamerlane led forth their armies to overrun Europe.

All the materials for the railroad, even the wood for its construction, come from the interior of Russia. Some of the workmen come from beyond Smolensk in Russia, near the borders of Poland; others are the war-like Tekkes and Turkomans, of whom nearly eight thousand have been employed upon the road; while more are seeking employment than are required.

The horses are purchased in the steppes of Kirghiz, one thousand kilometres east from Merv, while their drivers are the Cossacks from the district of the Don, two thousand kilometres west.

Water, which is wanting almost everywhere in these vast steppes, is collected in the oases. It is frequently muddy and sometimes salt, and is then purified by powerful filters, and pumped through pipes, which furnish it to the laborers, thirty kilometres distant. Coal and wood for fuel are wanting; but petroleum has been discovered in almost unlimited quantities, and is used for locomotives and steamers.

The Russian colony lives in ambulant villages, moving along as the work progresses, carrying with it the commissariat, stores, and offices, and a collection of such articles as may be required for the work or the workmen. The telegraph precedes the railroad; and already Merv, Samarkand, and Bokhara are connected by wires with